



City of Evansville Environmental Protection Agency

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Mayor Jonathan Weinzapfel

March 12, 2004

Mr. Keith Oeth
B&M Plastics, Inc.
P.O. Box 988
Mount Vernon, IN 47620

Dear Mr. Oeth:

Re: Exempt Construction and Operation Status,
163-17968-00167

The application from B&M Plastics, Inc., received on September 15, 2003, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following plastic processing plant, to be located at 2300 Lynch Road, Evansville, IN 47711, is classified as exempt from State of Indiana air pollution permit requirements:

- (a) Five (5) extruders, labeled Extruder # 1-5, have a combined maximum capacity of 4,150 lbs/hr. The extruders are vented through stack #1 to the atmosphere.
- (b) Two (2) R&D extruders, labeled R&D# 1 and R&D# 2 have a combined maximum capacity of 75 lbs/hr. The R&D extruders vent through stack #4 to the atmosphere.
- (c) Three (3) extruders, labeled Extruder #6-8, have a combined maximum capacity of 2,050 lbs/hr. The extruders are vented through stack #6 to the atmosphere.
- (d) Four (4) blenders, labeled Blender #1-4, have a combined maximum capacity of 78,000 lbs.
- (e) Four (4) blenders, labeled Blender #5-8, have a combined maximum capacity of 2300 lbs/hr.
- (f) Three (3) silos – for railcar unloading, having a combined maximum capacity of 375,000 lbs. These silos are controlled by silo filters that are considered integral to the process that have a total filter area of 216 ft². The material is transferred to the silos by pneumatic conveyance.
- (g) Four (4) silos – for truck unloading, having a combined maximum capacity of 500,000 lbs. These silos are controlled by silo filters that are considered integral to the process that have a total filter area of 432 ft². The material is transferred to the silos by pneumatic conveyance.
- (h) One (1) 16,000 gallon maximum capacity underground water bath holding tank equipped with an 80 gal/minute recirculation pump used to decrease water temperature and circulate through extruder in final product processing.
- (i) One (1) Safety Kleen 35"x26"x8" degreasing sink attached to a 30 gallon drum that circulates solvent for parts washing. Consumption of solvent is one pint per month, or three (3) gallons per year.
- (j) Two (2) Kewanee 125 hp, 5.25mmBtu/hr natural gas industrial boilers serial # N613, #N614 used to provide hot water and heating for facility.

- (k) Three (3) grinders, labeled Grinder #1-3, have a combined maximum capacity of 1500 lbs/hr.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. Pursuant to 6-2-3 (d) (Emission Limitations for facilities specified in 326 IAC 6-2-1(c)):
 - (a) Particulate emissions from all facilities used for indirect heating purposes which were existing and in operation on or before June 8, 1972, shall in no case exceed 0.8 lb/mmBtu heat input.
3. Pursuant to 326 IAC 63-2 (Process Operations), the particulate matter (PM) from the blender operations shall not exceed 8.7 pounds per hour when operating at a maximum process weight of 6,200 pounds per hour.

The pound per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 \times (3.1)^{0.67} = 4.10 \times 2.13 = 8.7 \text{ pounds PM/hr.}$$

4. Pursuant to 326 IAC 83-5(b) (Cold Cleaner Operations), for cold cleaning operations constructed after July 1, 1990, the owner or operator shall:
 - (a) Close the degreaser cover whenever articles are not being handled in the degreaser;
 - (b) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases;
 - (c) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Evansville Environmental Protection Agency (EEPA) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

B&M Plastics, Inc.
Evansville, Indiana
Permit Reviewer: EEPA/AM

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163-17968-00167
March 12, 2004

Original Signed by Alma Mifflin
Alma Mifflin, Permitting Specialist
Evansville Environmental Protection Agency

cc: IDEM-OAQ

**Indiana Department of Environmental Management
Office of Air Quality
and
Evansville Environmental Protection Agency**

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name: B&M Plastics, Inc.
Source Location: 2300 Lynch Road, Evansville, Indiana 47711
County: Vanderburgh
SIC Code: 3087
Operation Permit No.: 163-17968-00167
Permit Reviewer: EEPA/AM

The Office of Air Quality (OAQ) and the Evansville EPA have reviewed an application from B&M Plastics, Inc. relating to the construction and operation of a plastic processing plant.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Five (5) extruders, labeled Extruder #1-5, have a combined maximum capacity of 4,150 lbs/hr. The extruders vent through stack #1 to a general exhaust.
- (b) Three (3) extruders, labeled Extruder #6-8, have a combined maximum capacity of 2,050 lbs/hr. The extruders vent through stack #6 to a general exhaust.
- (c) Two (2) R&D extruders, labeled R&D#1 and R&D#2 have a combined maximum capacity of 75 lbs/hr. The R&D extruders vent through stack #4 to a general exhaust.
- (d) Four (4) blenders, labeled Blender #1-4, have a combined maximum capacity of 78,000 lbs/hr.
- (e) Four (4) blenders, labeled Blender #5-8, have a combined maximum capacity of 2,300 lbs/hr.
- (f) Three (3) silos with a combined maximum capacity of 375,000 lbs. designated for railcar unloading. These silos are controlled by silo filters that are considered integral to the process that have a total filter area of 216 ft². The material is transferred to the silos by pneumatic conveyance.
- (g) Four (4) silos with a combined maximum capacity of 500,000 lbs. designated for truck unloading. These silos are controlled by silo filters that are considered integral to the process that have a total filter area of 432 ft². The material is transferred to the silos by pneumatic conveyance.
- (h) Degreasing operation consists of one (1) Safety Kleen 35"x26"x8" degreasing sink attached to a thirty (30) gallon drum that circulates solvent for parts washing. Consumption of solvent is one pint per month or three (3) gallons per year.
- (i) Three (3) grinders, labeled grinder #1-3, have a combined maximum capacity of 1500 lbs/hr.
- (j) One (1) 16,000 gallon maximum capacity underground water bath holding tank equipped with an 80 gal/minute recirculating pump used to decrease water temperature and circulate through extruder in final product processing.

- (k) Two (2) Kewanee 125 hp, each 5.25mmBtu/hr natural gas industrial boiler, serial # N613 and # N614 used to provide hot water and space heating for facility.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Existing Approvals

The source has been operating under previous Exemption # 129-14255-00047 dated August 3, 2001 and Municipal Operating Permit # 0737 dated February 5, 2004.

All conditions from previous approvals were incorporated into this permit except the following:

- (a) 129-14255-00047 issued on August 3, 2001

Condition 326 IAC 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control):

Reason not incorporated: 326 IAC 8-3-5(a) the Safety Kleen 35" x 26" x 8" degreasing operation uses Solvent 150 which has a vapor pressure volatility of 0.6 mm of mercury and therefore does not meet the criteria for 326 IAC 8-3-5(a) applicability. However, 326 IAC 8-3-5(b) is applicable.

Air Pollution Control Justification as an Integral Part of the Process

The company has submitted the following justification such that the silo filters be considered as an integral part of the silo:

- (a) The silo filters are used as product separators in a pneumatic conveyance system.

IDEM, OAQ has evaluated the justifications and agreed that the silo filters will be considered as an integral part of the silos. Therefore, the permitting level will be determined using the potential to emit after the silo filters. Operating conditions in the proposed permit will specify that these silo filters shall operate at all times when the silos are in operation.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
#1 Bldg. 1	Extruder #1-5	28	1.5	N/A	Ambient
#2 Bldg. 1	BKA P/L burner #61	28.8	.83	N/A	Not in use
#3 Bldg. 1	Lab hood vent	20	N/A	N/A	N/A
#4 Bldg. 1	R&D Extruder 1 & 2	16	.500	N/A	N/A
#5 Bldg. 1	Flame hood in lab	20	N/A	N/A	N/A
#6 Bldg. 1	Extruder #6-8	28	1.5	N/A	Ambient

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 11, 2001, with additional information received on May 22, June 15, July 5, 2001, October 20, 2003, October 29, 2003, November 24 and 25, 2003, December 8, 2003, March 5, 2004, and March 8, 2004.

Emission Calculations

See Appendix A of this document pages 1 through 5 for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.32
PM-10	0.32
SO ₂	—
VOC	0.39
CO	18.19
NO _x	4.6

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of criteria pollutants is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of criteria pollutants is less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants is less than the levels listed in 326 IAC 2-1.1-3(d) (1), therefore, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption shall be issued.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (e) This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2.

County Attainment Status

The source is located in Vanderburgh County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Vanderburgh County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Vanderburgh County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source.

Federal Rule Applicability

- (a) The two (2) natural gas industrial boilers were constructed and installed in 1967, therefore there are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60.40c(a)) that are applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 40 CFR Part 63) applicable to this source.
- (c) The degreasing operation uses >0.5% by weight of a halogenated (HAP) solvent, and the concentration is less than five percent (5%) by weight designated in 326 IAC 20-6-1 and 40 CFR Part 63, Subpart T, therefore neither condition applies to this operation.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Vanderburgh County and the potential to emit any criteria pollutant is less than ten (10) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this plastic processing plant will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs, therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6-2-3 (Emission Limitations for facilities specified in 326 IAC 6-2-1(c))

Pursuant to 326 IAC 6-2-3, particulate emissions from indirect heating facilities existing and in operation before September 21, 1983, shall be limited by the following equation:

Pt = pounds of particulate matter per million Btu heat input (lb/mmBtu)

$$Pt = \frac{C * a * h}{76.5 * Q^{0.75} * N^{0.25}} \quad \text{where } C = 50 \quad a = 0.67 \quad h = 41 \\ Q = 5.25 \quad N = 2$$

$$Pt = \frac{50 * 0.67 * 41}{76.5 * 5.25^{0.75} * 2^{0.25}} \quad Pt = 4.35 \text{ lb/mmBtu}$$

Pounds of particulate matter calculated is greater than 326 IAC 6-2-3(d) therefore, particulate emissions from all facilities used for indirect heating purposes which were existing and in operation on or before June 8, 1972, shall in no case exceed 0.8 lb/mmBtu heat input.

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the blender operations shall not exceed 8.7 pounds per hour when operating at a maximum process weight of 6,200 pounds per hour.

The pound per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 * (3.1)^{0.67} = 4.10 * 2.13 = 8.7 \text{ pounds PM/hr.}$$

326 IAC 8-3-1 (Organic Solvent Degreasing Operations)

The degreasing operation was in operation after July 1, 1990, therefore 326 IAC 8-3-1 and 326 IAC 8-3-5(b) applies.

Conclusion

The construction and operation of this plastic processing plant shall be subject to the conditions of the attached Exemption 163-17968-00167.

Appendix A: Emission Calculations

Page 1 of 6 TSD App A

Emissions From the Silo Filters**Company Name:** B & M Plastics**Address City IN Zip:** 2300 Lynch Road, Evansville Indiana 47711-2951**Permit Number:** 163-17968-00167**Plt ID:** 167**Reviewer:** EEPA/AM**Date:** 8-Mar-04

PM emission given for the silo filters:	0.5253 lb/wk
	0.019173 tpy

Appendix A: Emission Calculations

Page 2 of 6 TSD App A

Emissions From the Degreaser Operations

Company Name: B & M Plastics
Address City IN Zip: 2300 Lynch Road, Evansville Indiana 47711-2951
Permit Number: 163-17968-00167
Plt ID: 167
Reviewer: EEPA/AM
Date: 8-Mar-04

Parts Washer:

Uses: 1 pint/month
1.5 gal/y
100% Volatility

Calculation of VOC Emissions = 0.00483 tpy

Blender Cleaner:

Uses: 1 gal/day
365 gal/y
reference density = 8.3456765 lb/gal
specific gravity = 1.063
density = 8.871454
5% Volatility

Calculation of VOC Emissions = 0.080952 tpy

Total = 0.085782 tpy

Appendix A: Emission Calculations

Page 3 of 6 TSD App A

Emissions From the Extruders

Company Name: B & M Plastics

Address City IN Zip: 2300 Lynch Road, Evansville Indiana 47711-2951

Permit Number: 163-17968-00167

Plt ID: 167

Reviewer: EEPA/AM

Date: 8-Mar-04

Given CO Emissions for extruders: 14.29 tpy

Appendix A: Emission Calculations**Summary of Emission Calculations****Company Name:** B & M Plastics**Address City IN Zip:** 2300 Lynch Road, Evansville Indiana 47711-2951**Permit Number:** 163-17968-00167**Plt ID:** 167**Reviewer:** EEPA/AM**Date:** 8-Mar-04

	Potential Emissions in Tons/Year					
	PM	PM-10	SO2	VOC	CO	Nox
Silo Filters	0.02	0.02	0	0	0	0
Degreasers	0.00	0.00	0	0.09	0	0
Extuders	0.00	0.00	0	0.00	14.29	0
Boilers	0.30	0.30	0	0.30	3.9	4.6
Total	0.32	0.32	0	0.39	18.19	4.6

	Potential Emissions in Pounds/Hour					
	PM	PM-10	SO2	VOC	CO	Nox
Silo Filters	0.00	0.00	0	0	0	0
Degreasers	0.00	0.00	0	0.02	0	0
Extuders	0.00	0.00	0	0.00	3.26	0
Boilers	0.07	0.07	0	0.07	0.89	1.05
Total	0.07	0.07	0	0.09	4.15	1.05

	Controlled Emissions in Tons/Year					
	PM	PM-10	SO2	VOC	CO	Nox
Silo Filters	0.02	0.02	0	0	0	0
Degreasers	0.00	0.00	0	0.09	0	0
Extuders	0.00	0.00	0	0.00	14.29	0
Total	0.02	0.02	0	0.09	14.29	0

	Controlled Emissions in Pounds/Hour					
	PM	PM-10	SO2	VOC	CO	Nox
Silo Filters	0.00	0.00	0	0	0	0
Degreasers	0.00	0.00	0	0.02	0	0
Extuders	0.00	0.00	0	0.00	3.26	0
Total	0.00	0.00	0	0.02	3.26	0

Methodology conversion from tpy to PTE lbs/hour for boilers:

PTE tpy x 2000 lbs / 8760hrs/yr = lbs/hr.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
2 Small Industrial Boilers @ 5.25mm Btu/hr
Company Name: B&M Plastics, Inc.
Address City IN Zip: 2300 Lynch Road, Evansville, IN 47711
Permit Number: 163-17968-00167
Plt ID: 167
Reviewer: A. Mifflin
Date: 3/8/2004

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

10.5

92.0

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.3	0.3	0.0	4.6	0.3	3.9

*PM emission and PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

(SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note to Reviewer: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to

See page 6 for HAPs emissions calculations.

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Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
2 Small Industrial Boilers @ 5.25MM Btu/hr
HAPs Emissions
Company Name: B&M Plastics, Inc.
Address City IN Zip: 2300 Lynch Road, Evansville, IN 47711
Permit Number: 163-17968-00167
Plt ID: 167
Reviewer: A. Mifflin
Date: 3/8/2004

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	9.658E-05	5.519E-05	3.449E-03	8.278E-02	1.564E-04

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	2.300E-05	5.059E-05	6.439E-05	1.748E-05	9.658E-05

Methodology is the same as page 1 except calculations are based on 2 small industrial boilers, each 5.25mmBtu/hr.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.